

ARF19

7242B & 7244A

User Guide



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GENERAL PRESENTATION

The ARF7242B module is a Xtal based reference 869.525MHz – 10mW FSK transmitter. This transmitter is compatible with any FSK receiver able to handle FSK +/-25KHz modulations as the ARF7244A one (description enclosed)

The ARF7244A receiver is a very high sensitivity (1uV / -107dBm) FSK single heterodyne receiver.

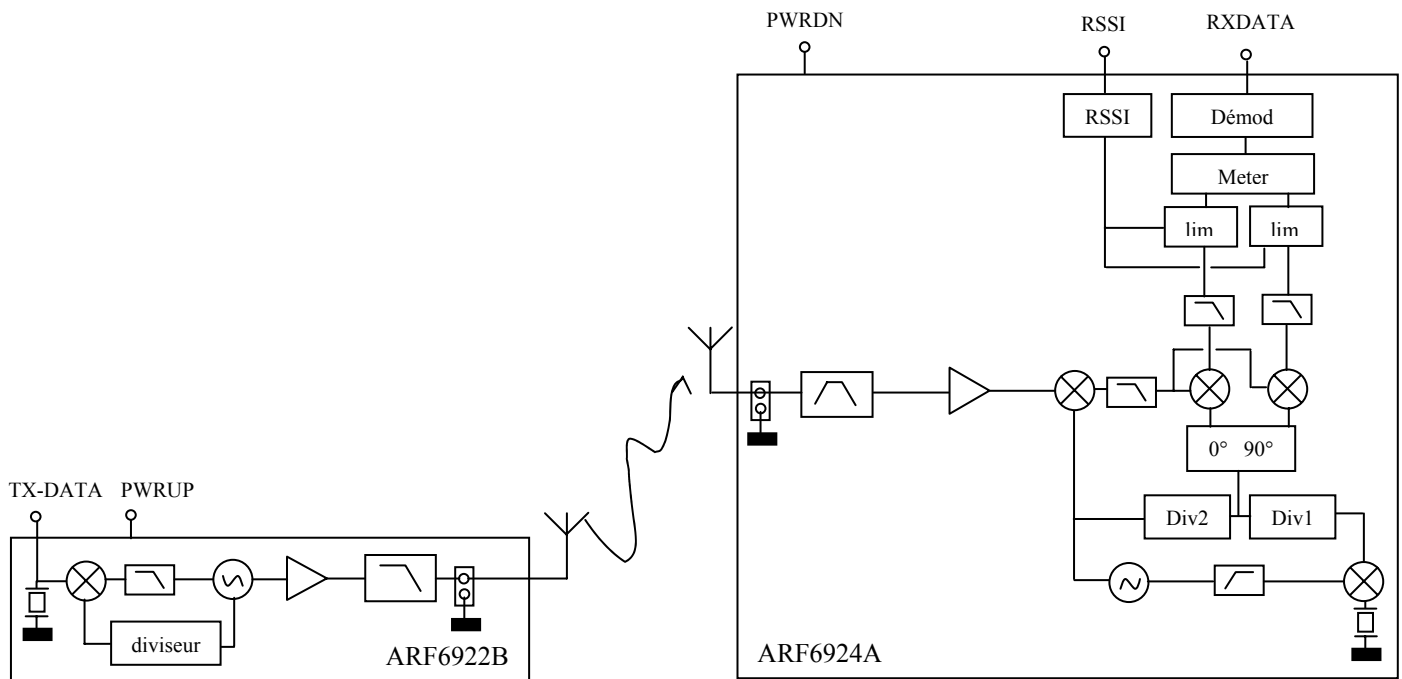
It could function with all the FSK +/-25KHz Xtal based transmitter (bandwidth: 100kHz).

These modules are supplied without any antenna. To get range performances, we recommend the use of a « Whip » antenna.

All these modules build rough radio link, bit coding and frame coding has to be managed by associated digital controller.

They are available as subassembly daughter board to complete an electronic digital motherboard.

SYNOPTICS



SPECIFICATIONS

- **Transmitter**

Parameters	Values	Notes
Operating frequency	869.525 MHz	-
Conducted power	10 mW (+10 dBm)	on 50Ω at 5V
Modulation	FSK ± 25 kHz	-
Operating voltage (VCC)	from 2V to 5V	
Digital input levels	0 / VCC	-
Consumption	15 mA	-
Standby current	<2 μA	-
Start time	2 ms	-
Pinning	See chapter 4.1	-
Size	25 x 14 x 7 without antenna	-

- **Receiver**

Parameters	Values	Notes
Frequency	869.525 MHz	-
Sensitivity	1μV (-107dBm)	On 50Ω
Demodulation	FSK ± 25 kHz	-
Bandwidth	100 kHz	-
Operating voltage (VCC)	from 2.2V to 5V	
Serial digital output	0 / VCC	-
Consumption	10 mA 12mA	at 3V at 5V
Standby current	<1 μA	-
Start time	5 ms	-
Pinning	see chapter 4.2	-
Size	25 x 16 x 7 without antenna	-

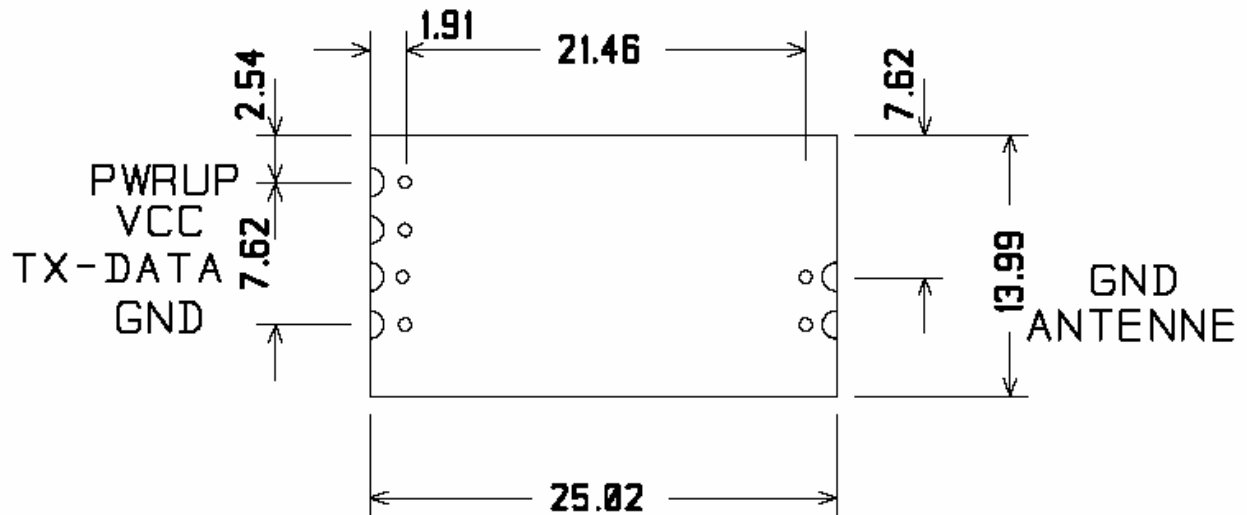
- **Complete set**

Parameters	Values
Link settling time	2.5ms
Range	300m
Binary rate	From 500 to 10000 bps Manchester
Temperature range	From -20°C to +70°C
Standards	Radio: EN300220 CEM: EN301489

PRODUCT INTERFACE

- Transmitter

Size / Electric pin assignment:



- **PWRUP:** Power up input
- **TX-DATA:** Data input

Notes

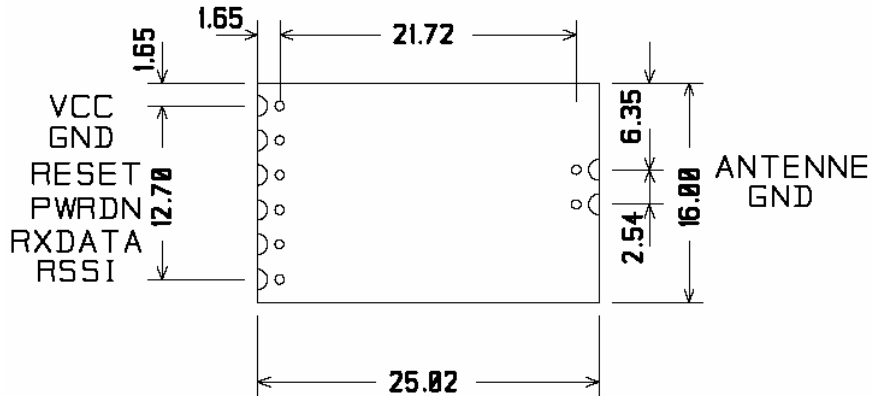
- Dimensions are given in mm.
- Antenna & Signals pins are SMD pads (pitch is 2.54mm – no connector supplied).

Notes

- Radio module has to be powered using an external power supply connected between VCC and GND. Operating voltage has to be in the 2 – 5V range.
- Power is triggered using the PWRUP pin:
 - PWRUP = "1" → Transmitter on.
 - PWRUP = "0" → Transmitter off.
- When in standby mode, « TX-DATA » pin has also to be logical "0".

- **Receiver**

Size / Electric pin assignment:



- RESET:** Not used – do not connect
- PWRDN:** Wake-up / standby mode
- RXData:** data outputs
- RSSI:** receipt power level

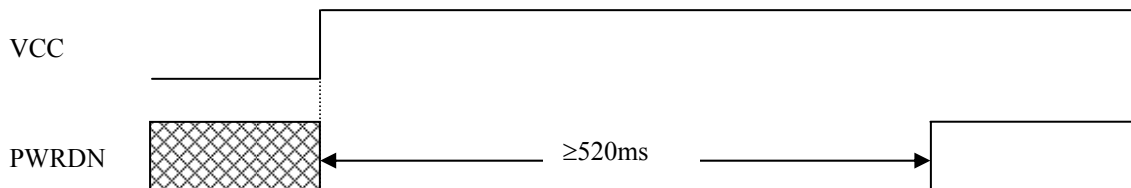
Notes:

- Dimensions are given in mm.
- Antenna & Signals pins are SMD pads (pitch is 2.54mm – no connector supplied).

- Radio module has to be powered using an external power supply connected between VCC and GND. Operating voltage has to be in the 2.2 – 5V range.
- Power is triggered using the PWRDN pin:
 - PWRDN = "1" → Receiver off.
 - PWRDN = "0" → Receiver on.

ATTENTION: If using a pull down resistor on PWRDN, its value has to be less than 220 Ohms!

If the receiver stand-by mode is activated immediately after powering up the equipment, please use timings below (for good receiver IC internal Reset).



- The RSSI output gives an image of the RF input level. The diagram is a view of the RSSI power evolution regarding the RF input level. RF:

